

**CENTRAL ILLINOIS LIGHT COMPANY**

**ELECTRIC TRANSMISSION AND DISTRIBUTION  
RELIABILITY REVIEW**

**83 ILLINOIS ADMINISTRATIVE CODE  
SUBPART B, PART 411**

**2000 ANNUAL REPORT**

**RE-SUBMITTED JUNE 29, 2001**

# **TABLE OF CONTENTS** **ANNUAL REPORT 411.120(b)(3)**

<b>Introduction .....</b>	<b>1</b>
<b>Section 411.120(b)(3)(A) – Plan for Future Investment and Reliability Improvements to Transmission and Distribution Facilities .....</b>	<b>1</b>
<b>i) Description of Operating Area .....</b>	<b>1</b>
<b>ii) Projects to Address Reliability Improvements and         and Associated Timetable .....</b>	<b>2</b>
<b>iii) Foreseeable Reliability Challenges .....</b>	<b>5</b>
<b>iv) Timetable for Achievement of Goals .....</b>	<b>6</b>
<b>v) Unresolved Reliability Complaints from Other Utilities,         ISOs and ARES .....</b>	<b>6</b>
<b>vi) Specific Actions to Resolve Complaints from Other Utilities,         ISOs and ARES .....</b>	<b>6</b>
<b>vii) Proposals to Address Controllable Outages .....</b>	<b>6</b>
<b>viii) Proposals to Reduce the Number of Outages .....</b>	<b>7</b>
<b>Section 411.120(b)(3)(B) – Implementation of the Previous Year’s Plan .....</b>	<b>11</b>
<b>Section 411.120(b)(3)(C) – Number and Duration of Planned and Unplanned Interruptions .....</b>	<b>14</b>
<b>Section 411.120(b)(3)(D) – Number and Causes of Controllable Interruptions .....</b>	<b>15</b>
<b>Section 411.120(b)(3)(E) – Interruptions Caused by Other Entities .....</b>	<b>15</b>
<b>Section 411.120(b)(3)(F) – Comparison of Reliability Indices for Customers Supplied by CILCO versus Other Alternative Suppliers .....</b>	<b>15</b>
<b>Section 411.120(b)(3)(G) – Report of the Age, Current Condition, Reliability and Performance of Existing Transmission and Distribution Facilities .....</b>	<b>15</b>

i) Qualitative Characterization of the Condition of the System .....	15
ii) Summary of Interruptions and Reliability Indices .....	16
iii) Expenditures for Transmission Construction and Maintenance .....	16
iv) Expenditures for Distribution Construction and Maintenance .....	17
v) Results of Customer Satisfaction Survey .....	17
vi) Overview of Customer Reliability Complaints .....	17
vii) Corresponding Information for the Previous Three Annual Reporting Periods .....	17
Section 411.120(b)(3)(H) – Reliability Indices by Operating Area .....	24
Section 411.120(b)(3)(I) – List of Worst Performing Circuits .....	24
Section 411.120(b)(3)(J) – Historical Review and Planned Improvements for Worst Performing Circuits .....	24
Section 411.120(b)(3)(K) – Number of Customers Experiencing a Set Number of Interruptions .....	31
Section 411.120(b)(3)(L)– List of Customers Experiencing Interruptions in Excess of Reliability Targets .....	31
Section 411.120(b)(3)(M) – CILCO Representative to Contact for Additional Information .....	31
Attachment A: Customer Satisfaction Survey	

## Introduction

Central Illinois Light Company (CILCO) has over 85 years of experience in the energy business. CILCO is committed to providing competitively priced energy and quality customer service. CILCO is a part of The AES Corporation, which is a leading global power company comprised of competitive generation, distribution, and retail supply businesses in 26 countries. AES is dedicated to providing safe, reliable clean electricity worldwide in a socially responsible way.

Due to a Y2K problem with CILCO's outage reporting system, a new reporting system was instituted starting in 2000. As a result, variances between this year's annual report and last year's in some cases may not be related to actual system changes but more to the use of different reporting programs. CILCO feels that the statistics in this year's report accurately reflect the actual interruptions experienced by our customers.

**411.120 (b)(3)(A) A plan for future investment and, where necessary, reliability improvements for the jurisdictional entity's transmission and distribution facilities that will ensure continued reliable delivery of energy to customers and provide the delivery reliability needed for fair and open competition, along with the estimated cost of implementing the plan and any changes to the plan from the previous annual report.**

**i) The plan must cover all operating areas, including a description of the relevant characteristics of each operating area and the age and condition of the jurisdictional entity's equipment and facilities in each operating area.**

CILCO's electric service territory covers 3700 square miles, 136 communities and approximately 200,793 customers. The service territory is comprised of 108 distribution substations with 299 feeders, 14 transmission and switching stations, and 35 industrial/wholesale substations. Approximately 62.9% of the distribution feeders are urban in nature. The Company's service area contains the cities of Peoria, East Peoria, Pekin, Lincoln, the outlying areas of Springfield, and other small communities in central Illinois. CILCO's distribution system consists of 1,918 miles (24.8%) of underground circuits and 5,829 miles (75.2%) of overhead circuits for a total of 7,747 circuit miles. The operating area and characteristics of the CILCO system have remained relatively constant during the last year. Three additional distribution feeders were put in service – one in 1998 and two in 1999. One distribution feeder was taken out of service in 2000. One transmission station and four industrial substations were also added in this time frame.

A qualitative characterization of the condition of CILCO's facilities is addressed in 411.120(b)(3)(G)(i), and the age of transmission and distribution facilities is addressed in sections 411.120(b)(3)(G)(iii) and 411.120(b)(3)(G)(iv).

Approximately 37.1% of CILCO's electric distribution system serves customers in rural areas on radial lines and is not capable of being fed from another source. As such, these types of feeders have a greater exposure to weather extremes, which impact the frequency of electric service outages and service restoration efforts.

**ii) The plan shall cover a period of no less than three years following the year in which the report was filed.**

The capital and O & M budget for the next four years is as follows:

YEAR	CAPITAL	O & M	TOTAL
2001	\$19,896,230	\$18,583,603	\$38,479,833
2002	\$19,896,230	\$18,583,603	\$38,479,833
2003	\$19,896,230	\$18,583,603	\$38,479,833
2004	\$19,896,230	\$18,583,603	\$38,479,833

The preliminary budget estimates for the years shown above are considered for order of magnitude only. Future estimated expenditures are constantly being revised based on new projects and reprioritization of system needs.

These budget expenditures represent an approximate increase of 5.2% in capital and 12.6% in o&m from the budgeted amounts provided for the first year of CILCO's 1999 annual reliability report. The increase in the capital budget is due primarily to an overall increase of \$455,000 in the general improvement budget. An increase of \$1,080,375 for cable replacement and a net increase of \$400,000 in substation construction (new Morton distribution station \$520,000) were partially offset by decreases in other capital budget items. While there are a number of increases and decreases in various o&m accounts the major increases are in tree trimming (\$1,745,987) and substation maintenance (\$1,348,854).

Specific Projects addressing reliability for 2001 through 2003:

Complete the distribution study of the 34.5KV system in the Lincoln and Springfield, IL. area. Results of the study to determine the exact location of an additional 15/20/25 MVA transformer to prevent an overload condition at station 168 with one transformer out of service. Total estimated expenditure for 2001 is \$4,000. The consultant is scheduled to complete this study in the second quarter at a cost of \$4,000 in 2001. The scheduled system improvements, as a result of this study, have not been finalized.

Substation 181 - Transformer and Feeder addition - \$86,000 - An outage of a section of the transmission line serving substation 097 forces it to be fed from a long radial path. System Planning studies have shown that the load at the substation will reach a point where the single contingency voltage drop

criterion of 7% will be exceeded. A method of relieving the bad on this substation and the overload on feeder no. 1 was developed which requires an additional feeder to be constructed in 2001 at an adjacent substation (181). Load will be transferred from 097-001 to 181-001. This work will be completed in 2001. \$427,000 was expended in 2000 and an additional \$86,000 will be spent in 2001 to complete the project.

Distribution Feeder 369-8 – Transfer load from 100-1 and 369-6 to 369-8 - \$120,000. Expenditures allow for the transfer of load to relieve feeders 100-1 and 369-6 that are projected to be above feeder design criteria. This work will be completed in 2001.

Substation 369 – Install new transformer - \$810,000. Expenditures (in 2002) allow for the addition of a second transformer at this location. The load on the existing transformer is projected at 102% in 2002. However, there are not sufficient feeder ties and portable substation capacity to carry the load in the case of the failure of transformer no. 1. This work will be completed by June of 2002.

Substation 168 – Install new transformer - \$130,000. Expenditures allow for the addition of a third transformer purchased in 2000 and an additional 15KV breaker. The load at the substation can not be carried with one transformer out of service. \$450,000 was expended in 2000. The transformer installation is scheduled for mid-year and the breaker addition for late in the year.

Substation 250 – Purchase and install new transformer - \$205,000. Expenditures allow for the replacement of the 5/6.25 MVA substation transformer with a 10/12.5 unit. This work will be completed in the fall of 2001.

Substation 270 – Substation addition - \$600,000. Expenditures allow for the installation of a 10/12.5 MVA transformer and third feeder exit. This work is scheduled for completion in June of 2001.

Review primary analysis on a yearly basis –approximately \$100,000. Issue job orders to replace or correct overloaded protective devices and balance feeders to improve reliability and reduce losses. This is related to the primary analysis program listed in 411.120(b)(3)(A)(viii).

Substation 17 – Replace three -15kv breakers - \$50,000. Expenditures allow for the replacement of three high maintenance 15 KV distribution breakers with more reliable units. This work will be completed in 2001. A total of \$49,300 was expended in 2000 and an additional \$50,000 will be spent in 2001. The replacement of 15 KV bus insulators has been added to the scope of work.

Substation 276 – Construct a new substation and associated feeders - \$1,090,000. Expenditures allow for the construction of a new substation and feeders to relieve projected overloads on feeders 184-5 and 388-2. This work will be completed in 2002.

Replace batteries and/or chargers – various substations - \$50,000. Expenditures allow for the replacement of existing high maintenance, low reliability batteries and or battery chargers with new units at six substations: 056, 059, 355, 356, 380, & 388. This work will be completed in 2001.

Underground Cable Replacement - \$1,370,000: Expenditures are for the replacement of underground cable. This is related to the cable replacement program listed in 411.120 (b)(3)(A)(viii). This work will continue through 2003.

Over the next 5 years CILCO will be spending millions of dollars in conjunction with the Illinois Department of Transportation's proposed improvements to Interstate 74 through the Peoria area. Conflicts with these I-74 improvements will necessitate the relocation of a large number of electric facilities. While facilities may not need replacement from a reliability standpoint, upon completion this work will result in a more reliable system. Also, during the I-74 construction, service reliability may be lessened due to facilities being taken out of service or served from temporary facilities.

Distribution Feeder 369-009 – construct a new distribution feeder to relieve load on the existing feeder (369-006) that serves the northwest area of Peoria Illinois. The planned commercial development in this area will necessitate this construction. Budget estimates for this feeder have not been finalized. This work is scheduled for completion in 2003.

Distribution Feeder 388-004 – construct a new distribution feeder to relieve load on the existing feeder (184-001) that serves the west area of Morton Illinois. The planned new business development in this area will necessitate this construction. Budget estimates for this feeder have not been finalized. This work is scheduled for completion in 2003.

CILCO will continue to fund the capital and o&m programs discussed under Section 411.120(b)(3)(A)(viii) of this report.

Other specific projects addressing reliability during the 2002 – 2003 time period will be identified and funded based on the results of CILCO's capital and o&m budgeting process which will be completed during the 4<sup>th</sup> quarter of 2001.

**iii) The plan shall identify all foreseeable reliability challenges and describe specific projects for addressing each.**

Reliability challenges exist in the outage areas related to trees, animals, and cable failures.

Tree related outages - CILCO maintains approximately 5,829 miles of overhead distribution line within its system. There are approximately 268 distribution feeders requiring periodic vegetation management within the system. CILCO's line clearance program is designed to clear all overhead lines of tree conflicts on an established preventative maintenance cycle. The current targeted trim cycle is four years. Work is performed by contracted tree trimming crews assigned to specific geographic areas of the distribution system for circuit trimming. This is the most cost efficient way to accomplish distribution system vegetation management. The target trim cycle of four years has not been met during the reporting period of 1996-1999. The 2000 line clearance program funding was increased by 30% over the 1999 budget. The company recognizes the need to attain a four-year trimming cycle. For 2001 CILCO has budgeted to increase the number of contractor line clearance crews from 20 to 30, resulting in an increase of \$1.8 million over the 2000 budget. Provided sufficient qualified manpower can be obtained and retained, this level of funding should enable CILCO to attain a four-year trim cycle by the end of 2002.

Animal Related Outages - Animal guards are widely used on CILCO's electric facilities. Since the early 1980s animal guards have been standard equipment on all new distribution transformers. CILCO's current practice is to install an animal guard on any equipment after animal-related outages occur, if such installation is feasible. CILCO continues to monitor and field test the effectiveness of new equipment designed to prevent animal related outages.

Cable Failure Related Outages – It has been CILCO's practice to replace underground cable sections when there have been 3 cable faults within a 12 month period. In an effort to improve reliability and reduce outages CILCO has recently revised its policy. CILCO now replaces underground cable sections that have experienced 3 cable failures in the life of the cable. Work orders are prepared to replace bad cable sections that exceed this criterion.

CILCO, in an effort to improve reliability, has recently started a program to investigate the installation of mid-circuit reclosers on those distribution circuits experiencing a large number of interruptions.



**iv) The plan shall provide a timetable for achievement of the plan's goals.**

The timetables for those items in section ii and iii above that are not ongoing are provided in those sections.

**v) The plan shall report and address all unresolved reliability complaints about the jurisdictional entity's system received from other utilities, independent system operators, and alternative retail electric suppliers.**

There were no reliability complaints and no unresolved reliability complaints exist about the CILCO system received from other utilities, independent system operators, or alternative retail electric suppliers.

**vi) The plan shall report the specific actions, if any, the jurisdictional entity is taking to address the concerns raised in such complaints received from other utilities, independent system operators, and alternative retail electric suppliers.**

No plan of action required.

**vii) The plan must consider all interruption causes listed in Section 411.120(b)(3)(D).**

Animal Related - Installation of squirrel guard protection devices in distribution substations and on distribution transformers where animal contacts have occurred as discussed in section iii above.

Employee/Contractor Personnel Errors – In this last reporting period there has been an increase in the number of Employee/Contractor Personnel Errors (35 to 79). This increase may be in part due to better documentation of outage cause. Outages related to employee/contractor errors are reviewed with the parties involved to determine what corrective actions need to be taken to reduce the occurrence of these types of outages in the future.

Tree Related - For 2001 CILCO has budgeted to increase the number of contractor line clearance crews from 20 to 30, resulting in an increase of \$1.8 million over the 2000 budget. Provided sufficient qualified manpower can be obtained and retained, this level of funding should enable CILCO to attain a four-year trim cycle by the end of 2002.

Underground Equipment Related - Monthly analysis of Underground Cable Failure Reports is performed to determine segments of cable that have failed more than 3 times since the installation of the cable. Work orders are prepared to replace bad cable sections that exceed this criterion.

Substation/Transmission Equipment Related – There were a total of 3 controllable outages in this category. Two were related to tree trimming and 1 was related to employee/contractor personnel errors and is addressed above.

CILCO, in an effort to improve reliability, has recently started a program to investigate the installation of mid-circuit reclosers on those distribution circuits experiencing a large number of interruptions. This should help reduce the number of customers interrupted due to the controllable outages described above.

**viii) The plan must consider the effects on the customers and the cost of reducing the number of interruptions reported as required by Section 411.120(b)(3)(C).**

The programs shown below are funded as part of CILCO's capital and maintenance budget to improve reliability. CILCO's budgeting process does not provide the details associated with each program listed, except for tree trimming.

<u>Specific Program</u>	<u>Explanation</u>
Tree Trimming	Scheduled circuit trimming of distribution feeders with occasional "hot spot" trimming and a vegetation management program for the transmission system.
Transmission Switch Maintenance	Transmission and sub-transmission switches are checked and adjusted/repared as necessary.
Infrared Testing	Transmission and distribution substations are inspected with infrared equipment for abnormal heating of components.
Substation Inspection	All transmission and distribution substations are visually inspected during monthly load reads and prior to switching operations.
Transformer Oil Testing	Substation power transformer oil is tested for gas by-products.
Substation Maintenance	Maintenance and testing is performed on substation equipment (circuit breakers, transformers, batteries, etc.) based upon CILCO's experience, manufacturer's recommendations, number of operations, or time.

Protective Relay Testing	Transmission line protective relays at generating stations are periodically tested. The remaining transmission relays are tested in conjunction with the investigation of system problems, including suspected relay misoperations.
Load Flow Analysis	Analysis of the 69KV and 34.5 KV transmission system is performed on an as-requested basis. Proposed work activities are analyzed to determine if any planned outages will cause line loading to exceed emergency ratings. MAIN currently performs these analyses for the 345KV and 138KV facilities.
Animal Protective Guards	Animal protection devices are installed in distribution substations and on distribution transformers where animal contacts have occurred. Since the early 1980s animal guards have been standard equipment on all new distribution transformers.
Outage Reports	Computer generated reports are produced, as needed, for the operating and engineering departments for evaluation of outage causes and system reliability.
Transformer Load Management	Determines distribution transformer loading by converting KWH and KW to KVA demand; the program is run semi-annually and indicates summer and winter peak demands on transformers.
Cable Replacement Program	Monthly analysis of Underground Cable Failure Reports to determine segments of cable that have failed more than 3 times since installation. Work orders are prepared to replace bad cable sections that exceed this criterion.
Underground Network Protectors	Periodic testing of all protectors on network transformers.

Aerial Line Patrols	Transmission and sub-transmission lines are patrolled utilizing contract aircraft and company personnel to inspect facilities.
Distribution Feeder Patrol	Distribution circuits are inspected by driving and/or foot patrols.
Worst-circuit Analysis	Annual analyses of worst performing distribution feeders with appropriate measures taken to improve reliability.
Specific High Outage Analysis	Periodic analysis of reports to pinpoint specific areas where frequency of outages is above average.
Mobile Data	Improvement to work management practices for field service technicians by improving dispatching and routing of orders. Helps service technicians to meet scheduled appointments.
Primary Analysis	Periodic review of Primary Analysis reports used to balance feeders and correct overloaded equipment to improve system reliability.
Weather Radar Reporting	Computer software and hardware purchased to receive and display weather data and storm development, intensity, and movement.
Air Flow Spoilers	Tubular plastic rod design to wrap around existing conductor to prevent or retard galloping due to ice and wind.
T2 Conductor	Twisted pair conductor developed to prevent or retard galloping due to ice and wind.
Oval Conductor	New conductor with anti-gallop tendencies similar to T2 conductor.

Distribution Studies	Perform various distribution studies as required. In 2000 a study was started on the 34.5KV system in the Lincoln and Springfield, IL area. The study will be completed in 2001.
Other Distribution Projects	Distribution system strengthening not included above; items may be single year or multiple year projects.
Other Substation Construction Projects	Major and minor substation projects not included above; items may be single year or multiple year projects.

The expenditures of \$3,368,000 shown below for the following projects are associated with the implementation costs of the projects and are not included in 411.120 (b)(3)(A)(ii) above. Any expenditure to maintain the projects is included in the total O & M expenditures shown in the table presented in 411.120 (b)(3)(A)(ii).

In 2000, the remaining portion of the new Energy Management System was completed and is now in service. This three-year project replaced the existing 25-year-old system and increased our past capabilities. The new system enhances CILCO's ability to monitor and control the safety, reliability and security of the electric system. The expenditure for 2000 was \$104,940 with a total system cost over the life of the installation of \$5,439,065. In 2001 efforts will take place to establish an offsite backup to further enhance the reliability of the system in case of a major disaster. Estimated 2001 expenditure is \$6,000.

On January 25, 2000, the Automated Mapping / Facilities Management/ Geographical Information System Project for the Electric Transmission and Primary Distribution System was completed. This project includes the replacement of the existing Trouble Analysis Processing System (TAPS) outage product with a new product called PowerOn (completed 1/25/00). This project is expected to improve the management of service restoration, ICC reporting, and distribution planning. In 2000, Transformer Load Management and a Field View application were installed, and a Graphical Design Application and System Analysis Application were started. Related expenditure for 2000 was \$1,332,750. The Electric Secondary and Service Conversion and an upgrade to Smallworld 3.1 will be completed in the first quarter of 2002. The implementation of the Graphical Design and System Analysis applications will continue. Additional functionality to track recloser and breaker maintenance and operations histories will be added. Related expenditures for 2001 are estimated at \$1,447,000.

In 2000, CILCO successfully implemented changes to its existing Customer Information System, Accenture's (formerly Andersen Consulting) CUSTOMER/1™ to accommodate functionality that allowed all non-residential customers to participate in deregulation. Changes were also made to accommodate meter service providers (MSP) and for the unbundling of meter services. Due to CILCO's low bundled rates, no CILCO customer has chosen to go on delivery service tariffs and purchase power from an alternative electric supplier. A customer must choose delivery service tariffs before they are eligible for unbundled meter services. Since it is not anticipated that any customers will be utilizing alternative metering services, the changes have not been put into the Production region. The changes will be put into Production once a customer chooses another meter services provider but, nevertheless, it is anticipated that the changes will be in the Production region no later than the end of 2001. Expenditures for 2000 for deregulation and meter unbundling were \$1,776,737. Specifications for requirements relating to residential deregulation are being identified in preparation for a 2002 deadline. Estimated costs relating to deregulation and meter unbundling for 2001 are \$1,500,000.

In June of 1998 a new Mobile Data System was installed to improve customer service by scheduling appointments better, thus helping meet appointments on time. Mobile data improves work management practices for field service technicians by improving dispatching and routing of orders. In 2001 an upgrade is being installed to increase the functionality of the system. Related expenditure for 2001 - \$415,000.

**411.120 (b)(3)(B) A report of the jurisdictional entity's implementation of its plan filed pursuant to subsection (b)(3)(A) of this Section for the previous annual reporting period, including an identification of significant deviations from the first year of the previous plan and the reasons for the deviations.**

A report on significant deviations from the 1999 plan is presented below.

Perform a distribution study of the 34.5KV system in the Lincoln and Springfield, IL. area. Results of the study to determine the exact location of an additional 15/20/25 MVA transformer to prevent an overload condition at station 168 with one transformer out of service. Total estimated expenditure for 2000 is \$400,000.

2000 Update and Deviations – The consultant is scheduled to complete this study in the second quarter of 2001. Expenditures for the study in 2000 were \$43,200 and the estimate to complete the study in 2001 is \$4,000. The additional system improvements, as a result of this study, have not been finalized. The expenditures related to the transformer installation were \$542,400 for 2000. The deviation from the 2000 estimated expenditures of

\$400,000 is due to the transformer delivery schedule allowing for a portion of the installation to be completed in 2000.

Substation 181 - Transformer and Feeder addition - \$550,000. An outage of a section of the transmission line serving substation 097 forces it to be fed from a long radial path. System Planning studies have shown that the load at the substation will reach a point where the single contingency voltage drop criterion of 7% will be exceeded. A method of relieving the load on this substation and the overload on feeder no. 1 was developed which requires an additional feeder to be constructed in 2000 at an adjacent substation (181). Load will be transferred from 097-001 to 181-001. The estimated cost of the 2000 expenditure is \$550,000.

2000 Update and Deviations - This work was not completed in 2000 due to other higher priority work; it will be completed in 2001. \$427,000 was expended in 2000 and an additional \$86,000 will be spent in 2001 to complete the project.

Distribution Feeder 370-3 – Transfer load from 370-2 to 370-3 - \$8,000. Expenditures allow for the transfer of load to relieve an overloaded (108%) feeder cable exit.

2000 Update and Deviations - This work was completed in 2000. Actual expenditure \$7,000.

Distribution Feeder 372-3 – Add feeder exit and feeder -\$300,000. Expenditures allow for the addition of a new substation exit and third feeder. The load on the existing feeder no. 2 exceeds the design criteria for feeder loading.

2000 Update and Deviations – This work was completed in 2000. Actual expenditure \$290,000.

Substation 49 – Replace existing regulators - \$25,000. Expenditures allow for the replacement of overloaded (140%) feeder #1 regulators with larger units. 2000 Update and Deviations - This work was completed in July 2000. Actual expenditure \$21,900.

Substation 119 – Replace existing regulators - \$25,000. Expenditures allow for the replacement of overloaded (150%) feeder #2 regulators with larger units.

2000 Update and Deviations - This work was completed in March 2000. Actual expenditure \$22,900.

Review primary analysis on a yearly basis –approximately \$100,000. Issue job orders to replace or correct overloaded protective devices and balance feeders to improve reliability and reduce losses. This is related to the primary analysis program listed in 411.120(b)(3)(A)(viii).

2000 Update and Deviations – Twenty-six job orders were completed in 2000. These job orders are not tracked on an individual basis for expenditures.

Substation 17 – Replace three-15kv breakers - \$50,000. Expenditures allow for the replacement of three high maintenance 15 KV distribution breakers with more reliable units.

2000 Update and Deviations - This work will be completed in 2001. A total \$49,300 was expended in 2000 and an additional \$50,000 will be spent in 2001. The replacement of 15 KV bus insulators has been added to the scope of work.

Replace batteries and/or chargers – various substations - \$50,000. Expenditures allow for the replacement of existing high maintenance, low reliability batteries and or battery chargers with new units at seven substations: 49, 145, 179, 240, 316, 348, & 362.

2000 Update and Deviations - Batteries and or battery chargers were replaced at substations 49, 179, 240, 316, 348, & 362 during 2000 at a cost of \$62,800. The battery at substation 145 was tested and found to be adequate. Batteries were also replaced at 3 additional substations (147, 56, & 153) during 2000 at a cost of \$21,400.

Underground Cable Replacement - \$1,000,000. Expenditures are for the replacement of underground cable. This is related to the cable replacement program listed in 411.120(b)(3)(A)(viii).

2000 Update and Deviations – Expenditures for the replacement of underground cable in 2000 were \$1,206,000. The variance was due to a greater than anticipated number of cable failures requiring cable replacement for the year.

Energy Management System - \$298,600. In 2000, the remaining portion of the new Energy Management System will be completed. This three-year project will replace the existing 25-year-old system and increase our existing capabilities. The new system will enhance CILCO's ability to monitor and control the safety, reliability and security of the electric system.

2000 Update and Deviations – Project completed. The expenditure for 2000 was \$104,904 with a total system cost over the life of the installation of \$5,439,065. The variance was due to a lower than estimated expenditure to complete.

Automated Mapping / Facilities Management/ Geographical Information System Project - \$1,239,400. On January 25, 2000, the Automated Mapping / Facilities Management/ Geographical Information System Project was completed. This project includes the replacement of the existing TAPS outage product with a new product called PowerOn (completed 1/25/00). This project is expected to improve the management of service restoration, ICC reporting, and distribution planning. In 2000, a Graphic design application will be installed, along with the Transformer Load Management and analytical interface.



2000 Update and Deviations – In 2000, Transformer Load Management and a Field View application were installed, and a Graphical Design Application and System Analysis Application were started. The expenditure for 2000 was \$1,263,500.

Customer Information System - \$1,307,100. In 1999, CILCO successfully implemented the LOADSTAR suite of products for billing of commercial, industrial and deregulated customers. Enhancements were also made to CILCO's existing Customer Information System, Andersen Consulting's CUSTOMER/1™, to accommodate functionality specific to deregulation which was effective on October 1, 1999. Specifications for requirements relating to the unbundling of meter services are currently being identified and implemented in preparation for a September 2000 deadline. CILCO is continuously assessing various software applications currently available in the marketplace that meet the rapidly changing needs of our customers. In 2000, CILCO will pursue an integrated solution that will allow the Company to continue to provide accurate, complete and timely information for its customers.

2000 Update and Deviations – In 2000, CILCO successfully implemented changes to CILCO's existing Customer Information System, Accenture's (formerly Andersen Consulting) CUSTOMER/1™ to accommodate functionality that allowed all non-residential customers to participate in deregulation. Changes were also made to accommodate meter service providers (MSP) and for the unbundling of meter services. Expenditures for 2000 for deregulation and meter unbundling were \$1,776,737. Deviations from the estimate are a result of all requirements not being identified at the time of the estimate and a change in the software firm during 2000 due to its acquisition by another company.

**411.120 (b)(3)(C) The number and duration of planned and unplanned interruptions for the annual reporting period and their impacts on customers.**

2000 Planned (scheduled) Interruptions and Duration – There were 474 interruptions that impacted 28,893 customers with an average duration per outage (duration hours ÷ outages) of 1.22 hours.

2000 Unplanned (unscheduled) Interruptions and Duration – There were 4,514 interruptions that impacted 331,520 customers with an average duration per outage (duration hours ÷ outages) of 2.98 hours.

**411.120 (b)(3)(D) The number and causes of controllable interruptions for the annual reporting period.**

Number and causes of Controllable Interruptions - 2000

Cause of Interruptions	No. of Interruptions
Animal Related	147
Employee/Contractor Personnel Errors	79
Tree related	110
Underground Equipment Related	40
Trans./Substation Equipment	3
<b>TOTAL</b>	<b>379</b>

**411.120 (b)(3)(E) Customer service interruptions that were due solely to the actions or inactions of another utility, another jurisdictional entity, independent system operator, or alternative retail electric supplier for the annual reporting period.**

Interruptions Due to Another Utility – There were 5 interruptions with a duration of 2,634.47 customer outage hours in 2000 due to another utility.

There were no interruptions due to the actions or inactions of another jurisdictional entity, independent system operator or alternative supplier.

**411.120 (b)(3)(F) A comparison of interruption frequency and duration for customers buying electric energy from the jurisdictional entity versus customers buying electric energy from another utility or alternative retail electric supplier for the annual reporting period. A jurisdictional entity may base this comparison on each customer's supplier as of December 31 of each year. A jurisdictional entity need not include this information for customers whose electric energy supplier is not known to the jurisdictional entity.**

No customers were supplied by another entity in 2000.

**411.120 (b)(3)(G) A report of the age, current condition, reliability and performance of the jurisdictional entity's existing transmission and distribution facilities, which shall include, without limitation, the data listed below. In analyzing and reporting the age of the jurisdictional entity's plant and equipment, the jurisdictional entity may utilize book depreciation. Statistical estimation and analysis may be used where actual ages and conditions of facilities are not readily available. The use of such techniques shall be disclosed in the report.**

- i) **A qualitative characterization of the condition of the jurisdictional entity's system defining the criteria used in making the qualitative assessment, and explaining why they are appropriate.**

CILCO's transmission facilities have an approximate average age of 19.6 years with an approximate average remaining life of 21.7 years. CILCO's distribution facilities have an approximate average age of 14.6 years with an approximate average remaining life of 22.5 years. These figures are based on the last depreciation study completed on December 31, 1997.

The Transmission and Distribution specific reliability improvements, enhancement programs and proposals itemized in section 411.120(b)(3)(A)-ii, iii, vii, viii above ensure that the CILCO facilities are inspected and maintained on a regular basis. In addition, numerous technology improvements have been initiated during the past four years to help improve work management, safety, reliability, and customer service while providing low cost electric service. These programs include a new customer care center, a resource management system, a mobile data system, an energy management system, an automated mapping / facilities management project, a new outage management system, and a new special contract and large industrial customer billing system. Based on these programs and CILCO's reliability indices, it can be generally concluded that the existing facilities are in good condition and provide our customers with safe and reliable service.

**ii) A summary of the jurisdictional entity's interruptions and voltage variances reportable under this Part, including the reliability indices for the annual reporting period.**

The number of planned/unplanned interruptions for 2000 was 4,988.

The System Reliability Indices for 2000 are:

SAIFI	1.65
CAIDI	2.63
CAIFI	2.18

**iii) The jurisdictional entity's expenditures for transmission construction and maintenance for the annual reporting period expressed in constant 1998 dollars, the ratio of those expenditures to the jurisdictional entity's transmission investment, and the average remaining depreciation lives of the entity's transmission facilities, expressed as a percentage of total depreciation lives.**

Location accounting principles are used for the transmission system. The total depreciated cost of transmission plant in service is \$41,359,924 and the average remaining depreciation lives expressed as a percentage of total depreciation lives is 61.0%. The 2000 capital expenditure for transmission plant was \$684,945 and O & M expenditure was \$2,074,157, for a total of \$2,759,102 or 6.7% of plant in service.

**iv) The jurisdictional entity's expenditures for distribution construction and maintenance for the annual reporting period expressed in constant 1998 dollars, the ratio of those expenditures to the jurisdictional entity's distribution investment, and the average remaining depreciation lives of the entity's distribution facilities, expressed as a percentage of total depreciation lives.**

CILCO uses mass accounting principles for the distribution system. The total depreciated cost of distribution plant in service is \$279,345,531 and the average remaining depreciation lives expressed as a percentage of total depreciation lives is 65.7%. The 2000 capital expenditure for distribution plant was \$17,827,190 and O & M expenditure was \$15,092,682, for a total of \$32,919,872 or 11.8% of plant in service.

**v) The results of the customer satisfaction survey completed during the annual reporting period and covering reliability, customer service, and customer understanding of the jurisdictional entity's services and prices.**

During the last quarter of 2000, an independent telephone survey of 600 active residential accounts and 400 active non-residential accounts was randomly conducted. The survey was conducted to meet the requirements of Part 411.120 (b)(3)(G)(v) covering the four areas of (1) satisfaction of reliability; (2) satisfaction of customer service; (3) customer understanding of jurisdictional services; and (4) customer understanding of jurisdictional prices. The results of the survey are provided as Attachment A.

**vi) An overview pertaining to the number and substance of customer's reliability complaints for the annual reporting period and their distribution over the jurisdictional entity's operating areas.**

CILCO received 7 informal electrical reliability complaints to the Illinois Commerce Commission in 2000 related to outages. The complaints had 7 different cause codes (animals, scheduled, trees, vehicles, transmission, unknown, and cable failure). All complaints have been resolved.

**vii) The corresponding information, in the same format, for the previous 3 annual reporting periods, if available.**

Qualitative Characterization – 411.120(b)(3)(G)(i)

The Transmission and Distribution specific reliability improvements, enhancement programs and proposals itemized in section 411.120(b)(3)(A)-ii, iii, vii, viii above ensure that the CILCO facilities are inspected and maintained on a regular basis. In addition, numerous technology improvements have been initiated during the past four years to help improve work management, safety, reliability, and customer service while providing low cost electric service. These programs include a new customer care center, a resource management system, a mobile data system, an energy management system, an automated mapping / facilities management project, a new outage

management system, and a new special contract and large industrial customer billing system. Based on these programs and CILCO's reliability indices, it can be generally concluded that the existing facilities are in good condition and provide our customers with safe and reliable service.

Summary of Interruptions and Reliability Indices – 411.120(b)(3)(G)(ii)

The CILCO service territory experienced several severe weather outbreaks in 1999, which increased the number of outages. The outage percentage by cause codes for 1999 were as follows:

CAUSE	PERCENTAGE
Weather Related	21.1
OH Equipment Related	16.1
UG Equipment Related	14.5
Animal Related	13.2
Intentional	10.5
Tree Related	6.8
Unknown	6.7
Public	5.9
Trans./Substation Equipment	2.7
Customer	1.1
Company/Contractor Errors	1.0
Other	0.2
Other Retail Electric Supplier	0.2

The CILCO service territory experienced above normal severe weather in 1998, which increased the number of outages. In particular a major thunderstorm with lightning and strong winds occurred on June 29, 1998 and a day of high straight line winds occurred on November 10, 1998. The outage percentage cause codes for 1998 were as follows:

CAUSE	PERCENTAGE
Weather Related	28.7
OH Equipment Related	21.8
Tree Related	13.5
UG Equipment Related	12.6
Animal Related	9.1
Unknown	4.2
Intentional	4.1
Public	3.3
Company/Contractor Errors	1.1
Other	0.7
Trans./Substation Equipment	0.5
Customer	0.4
Other Retail Electric Supplier	0.0

The outage percentage by cause codes for 1997 were as follows:

CAUSE	PERCENTAGE
OH Equipment Related	22.8
Weather Related	18.7
UG Equipment Related	13.9
Animal Related	12.7
Tree Related	8.1
Intentional	7.5
Public	6.6
Unknown	5.3
Company/Contractor Errors	1.9
Other	1.5
Customer	0.5
Trans./Substation Equipment	0.5
Other Retail Electric Supplier	0.0

Reliability Indices – 1999

SAIFI	1.82
CAIDI	2.13
CAIFI	2.35

Reliability Indices – 1998

Operating Area	SAIFI (outages/customer)	CAIDI(hours) (hours/outage)
Total Company	2.77 / 2.03*	7.69 / 3.10*
Northern	2.37 / 1.45*	11.25 / 4.73*
Central	2.48 / 1.81*	7.3 / 2.33*
Southern	4.33 / 3.90*	3.14 / 2.23*

\* Without the outages of a major storm on 6/29/98

Reliability Indices – 1997

Operating Area	SAIFI (outages/customer)	CAIDI(hours) (hours/outage)
Total Company	1.25117	1.81
Northern	1.48979	1.58
Central	.78473	1.98
Southern	1.51371	2.21

Transmission Expenditures – 411.120(b)(3)(G)(iii)

1999 - Location accounting principles are used for the transmission system. The total depreciated cost of transmission plant in service is \$40,162,077 and the average remaining depreciation lives expressed as a percentage of total

depreciation lives is 61.0%. The 1999 capital expenditure for transmission plant was \$512,889 and O & M expenditure was \$1,620,839, for a total of \$2,133,728 or 5.3% of plant in service.

1998 - Location accounting principles are used for the transmission system. The total depreciated cost of transmission plant in service is \$42,832,006 and the average remaining depreciation lives expressed as a percentage of total depreciation lives is 61.0%. The 1998 capital expenditure for transmission plant was \$788,176 and O & M expenditure was \$1,664,284, for a total of \$2,452,460 or 5.7% of plant in service.

1997 - Location accounting principles are used for the transmission system. The total depreciated cost of transmission plant in service is \$43,670,210 and the average remaining depreciation lives expressed as a percentage of total depreciation lives is 61.0%. The 1997 capital expenditure for transmission plant was \$524,873 and O & M expenditure was \$2,077,463, for a total of \$2,602,336, or 6.0% of plant in service.

Distribution Expenditures – 411.120(b)(3)(G)(iv)

1999 - CILCO uses mass accounting principles for the distribution system. The total depreciated cost of distribution plant in service is \$288,180,284 and the average remaining depreciation lives expressed as a percentage of total depreciation lives is 65.7%. The 1999 capital expenditure for distribution plant was \$18,521,586 and O & M expenditure was \$12,370,687, for a total of \$30,892,273 or 10.7% of plant in service.

1998 - CILCO uses mass accounting principles for the distribution system. The total depreciated cost of distribution plant in service is \$294,288,999 and the average remaining depreciation lives expressed as a percentage of total depreciation lives is 65.7%. The 1998 capital expenditure for distribution plant was \$20,379,716 and O & M expenditure was \$13,254,639, for a total of \$33,634,355 or 11.4% of plant in service.

1997 - CILCO uses mass accounting principles for the distribution system. The total depreciated cost of distribution plant in service is \$298,982,620 and the average remaining depreciation lives expressed as a percentage of total depreciation lives is 65.7%. The 1997 capital expenditure for distribution plant was \$18,874,756 and O & M expenditure was \$12,831,638, for a total of \$31,706,394 or 10.6% of plant in service.

Customer Survey – 411.120(b)(3)(G)(v)

1999 - During October of 1999, an independent telephone survey of 400 active residential accounts and 400 active non-residential accounts was randomly conducted. The survey was conducted to meet the requirements of Part 411.120 covering the four areas of (1) satisfaction of reliability; (2) satisfaction of customer service; (3) customer understanding of jurisdictional

services; and (4) customer understanding of jurisdictional prices. Survey results were as follows:

Reliability:

Overall satisfaction of providing reliable electric service – 97.5% satisfied or had no opinion.

Keeping the electric system, including power lines and equipment in good working order – 97.1% satisfied or had no opinion.

Minimizing the number of power outages lasting longer than 1 minute – 93.4% satisfied or had no opinion.

Customer service – How would you rate CILCO in:

Restoring electric service at your residence/business when outages occur – 94.5% satisfied or had no opinion.

Providing information about extended outages – 89.2% satisfied or had no opinion.

Being accessible during an outage – 91.8% satisfied or had no opinion.

Jurisdictional Services:

Are you aware that CILCO has a toll-free number to report outages?

Yes	83.3%
No	10.3%
Don't Know	6.4%

Are you aware that CILCO is available 24 hours a day, 7 days a week by telephone in case of a power outage?

Yes	90.8%
No	5.0%
Don't Know	4.1%
Refused	.1%

Are you aware that CILCO reports information about an extended power outage to the news media to keep customers informed?

Yes	73.0%
No	15.0%
Don't Know	12.0%



Are you aware that CILCO trims trees to reduce the occurrence of power outages?

Yes	83.8%
No	8.9%
Don't Know	7.3%

Jurisdictional Prices:

Are you aware, that the cost to provide services to reduce the number and duration of power outages, such as repairing and replacing electrical equipment, sending work crews to restore power, and trimming trees is reflected in the price you pay for electric distribution service?

Yes	73.6%
No	20.9%
Don't Know	5.5%

Do you receive a bill from CILCO at this address?

Yes	95.5%
No	3.6%
Don't Know	.8%
Refused	.1%

Do you personally see or handle this bill?

Yes	80.8%
No	19.2%

How would you rate CILCO on providing a bill that makes it easy to tell how much the current month's charges are? 95.4% satisfied or had no opinion.

1998 - During October of 1998, independent surveys were randomly sent to 4,000 active CILCO accounts covering all customer types (residential, commercial and industrial). The surveys were conducted to meet the requirements of Part 411.120 covering the four areas of (1) satisfaction of reliability; (2) satisfaction of customer service; (3) customer understanding of jurisdictional services; and (4) customer understanding of jurisdictional prices. Survey results were as follows:

Reliability: Percentage Satisfied or Had No Opinion

Reliability of electrical power – 92%

Accuracy of estimated outage duration – 87%

Timeliness of restoring electric power – 86%

Access to CILCO for information during an outage – 83%

Customer Service: Percentage Satisfied or Had No Opinion

Professionalism of representative – 94%

Knowledge level of representative – 93%

Responsiveness of representative – 92%

Representative cared/expressed concern for their needs – 92%

Representative had authority to resolve question or concern – 92%

Representative had access to information necessary to resolve question or concern – 91%

Representative on time for maintenance/construction – 90%

Jurisdictional Services: Percentage Having Some Understanding

How to report electrical outage or problems – 93%

Locating underground electrical lines – 79%

24-hour customer support provided – 75%

Electrical service turn-on/turn-off – 71%

New electrical service installation/electrical hookup – 68%

Priority service to customers on life support equipment – 34%

Alternative disconnection procedure for customers with serious illness – 31%

Level pay arrangements – 86%

Deferred payment options – 42%

Government assistance programs – 31%

Paying by mail – 97%

Various payment locations – 75%

Checking/savings account transfer as a payment method – 74%

Jurisdictional Prices: Percentage Having Some Understanding

Price of delivering electricity to their home or business – 83%

Price associated with state and municipal taxes – 77%

Price of customer charge – 75%

Price of generating and producing electricity – 73%

Price of the electric fuel adjustment charge – 53%

Price of billing demand – 53%

Price of deposits – 49%

Price of environmental charge – 45%

Customer satisfaction surveys were not performed in 1997 and 1996.

Overview of Customer Reliability Complaints – 411.120(b)(3)(G)(vi)

1999 - CILCO received 8 informal electrical reliability complaints to the Illinois Commerce Commission in 1999. All complaints have been resolved.

1998 - CILCO received 24 informal electrical reliability complaints to the Illinois Commerce Commission in 1998. All complaints have been resolved.

Nine of the complaints were related to tree contact problems on one feeder. Tree trimming on this feeder was completed in the first quarter of 1999.

1997- CILCO received 1 informal electrical reliability complaint to the Illinois Commerce Commission in 1997. The complaint was resolved.

**411.120 (b)(3)(H) A table showing the achieved level of each of the three reliability indices of each operating area for the annual reporting period (provided, however, that for any reporting period commencing before April 1, 1998, a jurisdictional entity will not be required to report the CAIFI reliability index)**

Reliability Indices – 2000

SAIFI	1.65
CAIDI	2.63
CAIFI	2.18

**411.120 (b)(3)(I) A list showing the worst-performing circuits for each operating area for the annual reporting period with the understanding that the designation of circuits as “worst-performing circuits” shall not, in and of itself, indicate a violation of this Part.**

Worst Performing Circuits for the reporting period 2000

SAIFI (outages/customer)	CAIDI (hours/outage)	CAIFI (outages/customer)
00-036-002 – 5.96	00-353-002 – 17.49	00-036-002 – 5.96
00-181-001 – 5.21	00-110-001 – 16.85	00-181-001 – 5.35
00-182-002 – 5.04	00-388-001 – 11.95	00-182-002 – 4.96

**411.120 (b)(3)(J) A statement of the operating and maintenance history of circuits designated as worst-performing circuits; a description of any action taken or planned to improve the performance of any such circuit (which shall include information concerning the cost of such action); and a schedule for completion of any such action. (The jurisdictional entity may decide, based on cost considerations or other factors, that it should take no action to improve the performance of one or more circuits designated as worst-performing circuits. If the jurisdictional entity decides to take no action to improve the performance of one or more circuits designated as worst-performing circuits, the jurisdictional entity shall explain its decision in its annual report).**

#### **Highest SAIFI**

Feeder 00-036-002 – 5.96

Operating and Maintenance History: This feeder was patrolled in May of 2000; major defects found on patrols were fixed immediately and minor

defects were repaired as conditions warranted. A monthly analysis of the Cable Failure Report is performed to determine segments of underground cable that have failed more than 3 times since installed. Work orders are prepared to replace bad cable sections that exceed this criterion. The primary analysis report is periodically reviewed to balance the feeder and correct overloaded protection equipment to improve system reliability. Squirrel guards are installed on distribution transformers where animal contact has occurred. Distribution circuit trimming was completed January 16, 2000. There were 5 feeder outages that contributed to this circuit being classified as a worst circuit. Outages at the substation included 1 due to an ice storm, 1 unknown, 1 vehicular, 1 storm related, and 1 due to a personnel error. Twenty-two other outages at various locations and due to numerous causes occurred on this feeder.

<b>Cause Category</b>	<b># of Outages</b>
Weather Related	10
Animal Related	9
Underground Facilities	3
Unknown	2
Vehicle	1
Overhead Facilities	1
Personnel Errors	1

**Action Planned or Taken to Improve Reliability:**

The area east of the substation and beyond protection number 20026 will be investigated for the addition of lightning arresters and the possible installation of a mid circuit recloser in 2001. The area west of the substation will also be reviewed for the possible installation of additional squirrel guards in 2001.

**Feeder 00-181-001 – 5.21**

**Operating and Maintenance History:** This feeder was patrolled in June of 2000; major defects found on patrols are fixed immediately and minor defects are repaired as conditions warrant. A monthly analysis of the Cable Failure Report is performed to determine segments of underground cable that have failed more than 3 times since installed. Work orders are prepared to replace bad cable sections that exceed this criterion. The primary analysis report is periodically reviewed to balance the feeder and correct overloaded protection equipment to improve system reliability. Squirrel guards are installed on distribution transformers where animal contact has occurred. The last distribution circuit trimming was completed October 26, 1995. This circuit is presently being trimmed with an estimated completion date of June 1, 2001. There were 2 feeder outages, caused by lightning, which contributed to this circuit being classified as a worst circuit. Twenty-one other outages at various locations and due to numerous causes occurred on this feeder.

<b>Cause Category</b>	<b># of Outages</b>
Weather Related	6
Overhead Facilities	5
Underground Facilities	5
Trees	4
Unknown	3

**Action Planned or Taken to Improve Reliability:**

Analysis of the outage history revealed no specific trouble spots requiring attention. The area south of the substation and beyond protection number 20818 will be investigated for the possible installation of a mid circuit recloser in 2001. A portion of the load on this feeder will be transferred to a new feeder 181-003 to be constructed in 2001.

**Feeder 00-182-002 – 5.04**

Operating and Maintenance History: This feeder was patrolled in 1999 and 2001; major defects found on patrols were fixed immediately and minor defects were repaired as conditions warranted. A monthly analysis of the Cable Failure Report is performed to determine segments of underground cable that have failed more than 3 times since installed. Work orders are prepared to replace bad cable sections that exceed this criterion. The primary analysis report is periodically reviewed to balance the feeder and correct overloaded protection equipment to improve system reliability. Squirrel guards are installed on distribution transformers where animal contact has occurred. Distribution circuit trimming was completed May 8, 2000. There were 5 feeder outages that contributed to this circuit being classified as a worst circuit. Two outages were related to ice. Additional outages at the substation included 1 unknown, 1 lightning, 1 overhead connector, and 1 emergency repair. Nine other outages at various locations and due to numerous causes occurred on this feeder.

<b>Cause Category</b>	<b># of Outages</b>
Weather Related	8
Overhead Facilities	3
Vehicle	1
Unknown	1
Animal Related	1

**Action Planned or Taken to Improve Reliability:**

Analysis of the outage history revealed no specific trouble spots requiring attention. Two mid-circuit reclosers are scheduled for installation in June 2001, one west of the substation and one east of the substation. In addition the circuit was re-coordinated and balanced in 2001.

## Highest CAIDI

### Feeder 00-353-002 – 17.49

Operating and Maintenance History: This feeder was patrolled in September of 2000; major defects found on patrols were fixed immediately and minor defects were repaired as conditions warranted. A monthly analysis of the Cable Failure Report is performed to determine segments of underground cable that have failed more than 3 times since installed. Work orders are prepared to replace bad cable sections that exceed this criterion. The primary analysis report is periodically reviewed to balance the feeder and correct overloaded protection equipment to improve system reliability. Squirrel guards are installed on distribution transformers where animal contact has occurred. Distribution circuit trimming was completed March 5, 1999. Twelve outages at various locations and due to numerous causes occurred on this feeder. One storm on April 20, 2000 accounted for 82.3% of the customer hours of interruption. Two outages (including the storm outage on 4/20/00) where the complete feeder was interrupted accounted for 99.1% of the customer's hours of interruption.

<b>Cause Category</b>	<b># of Outages</b>
Overhead Facilities	3
Underground Facilities	3
Weather Related	2
Trees	2
Animal Related	1
Vehicle	1

#### Action Planned or Taken to Improve Reliability:

Analysis of the outage history revealed no specific trouble spots requiring attention. A radial transmission line feeds this substation. Engineering will perform a detailed inspection of this circuit in 2001.

### Feeder 00-110-001 – 16.85

Operating and Maintenance History: This feeder was patrolled in March of 2000; major defects found on patrols were fixed immediately and minor defects were repaired as conditions warranted. A monthly analysis of the Cable Failure Report is performed to determine segments of underground cable that have failed more than 3 times since installed. Work orders are prepared to replace bad cable sections that exceed this criterion. The primary analysis report is periodically reviewed to balance the feeder and correct overloaded protection equipment to improve system reliability. Squirrel guards are installed on distribution transformers where animal contact has occurred. Distribution circuit trimming was completed July 14, 2000. Nine outages at various locations and due to numerous causes occurred on this

feeder. One lightning storm on April 20, 2000 accounted for 90.7% of the customer hours of interruption.

<b>Cause Category</b>	<b># of Outages</b>
Weather Related	6
Underground Facilities	2
Unknown	1

**Action Planned or Taken to Improve Reliability:**

Analysis of the outage history revealed no specific trouble spots requiring attention. The area south of the substation will be investigated for the addition of lightning arresters and the possible installation of a mid circuit recloser in 2001.

Feeder 00-388-001 – 11.95

Operating and Maintenance History: This feeder was patrolled in October of 2000; major defects found on patrols were fixed immediately and minor defects were repaired as conditions warranted. A monthly analysis of the Cable Failure Report is performed to determine segments of underground cable that have failed more than 3 times since installed. Work orders are prepared to replace bad cable sections that exceed this criterion. The primary analysis report is periodically reviewed to balance the feeder and correct overloaded protection equipment to improve system reliability. Squirrel guards are installed on distribution transformers where animal contact has occurred. Distribution circuit trimming was completed January 26, 2000. Fifteen outages at various locations and due to numerous causes occurred on this feeder. One lightning storm on April 20, 2000 accounted for 91.8% of the customer hours of interruption.

<b>Cause Category</b>	<b># of Outages</b>
Weather Related	6
Overhead Facilities	4
Underground Facilities	3
Vehicle	1
Trees	1

**Action Planned or Taken to Improve Reliability:**

Analysis of the outage history revealed no specific trouble spots requiring attention. The area east of the substation will be investigated for the addition of lightning arresters in 2001. The area northeast of the substation will also be surveyed for the possible installation of additional squirrel guards in 2001.

## Highest CAIFI

### Feeder 00-036-002 – 5.96

Operating and Maintenance History: This feeder was patrolled in May of 2000; major defects found on patrols were fixed immediately and minor defects were repaired as conditions warranted. A monthly analysis of the Cable Failure Report is performed to determine segments of underground cable that have failed more than 3 times since installed. Work orders are prepared to replace bad cable sections that exceed this criterion. The primary analysis report is periodically reviewed to balance the feeder and correct overloaded protection equipment to improve system reliability. Squirrel guards are installed on distribution transformers where animal contact has occurred. Distribution circuit trimming was completed January 16, 2000. There were 5 feeder outages that contributed to this circuit being classified as a worst circuit. Outages at the substation included 1 due to an ice storm, 1 unknown, 1 vehicular, 1 storm related, and 1 due to a personnel error. Twenty-two other outages at various locations and due to numerous causes occurred on this feeder.

<b>Cause Category</b>	<b># of Outages</b>
Weather Related	10
Animal Related	9
Underground Facilities	3
Unknown	2
Vehicle	1
Overhead Facilities	1
Personnel Errors	1

#### Action Planned or Taken to Improve Reliability:

The area east of the substation and beyond protection number 20026 will be investigated for the addition of lightning arresters and the possible installation of a mid circuit recloser in 2001. The area west of the substation will also be reviewed for the possible installation of additional squirrel guards in 2001.

### Feeder 00-181-001 – 5.35

Operating and Maintenance History: This feeder was patrolled in June of 2000; major defects found on patrols are fixed immediately and minor defects are repaired as conditions warrant. A monthly analysis of the Cable Failure Report is performed to determine segments of underground cable that have failed more than 3 times since installed. Work orders are prepared to replace bad cable sections that exceed this criterion. The primary analysis report is periodically reviewed to balance the feeder and correct overloaded protection equipment to improve system reliability. Squirrel guards are installed on distribution transformers where animal contact has occurred. The last



distribution circuit trimming was completed October 26, 1995. This circuit is presently being trimmed with an estimated completion date of June 1, 2001. There were 2 feeder outages, caused by lightning, which contributed to this circuit being classified as a worst circuit. Twenty-one other outages at various locations and due to numerous causes occurred on this feeder.

<b>Cause Category</b>	<b># of Outages</b>
Weather Related	6
Overhead Facilities	5
Underground Facilities	5
Trees	4
Unknown	3

**Action Planned or Taken to Improve Reliability:**

Analysis of the outage history revealed no specific trouble spots requiring attention. The area south of the substation and beyond protection number 20818 will be investigated for the possible installation of a mid circuit recloser in 2001. A portion of the load on this feeder will be transferred to a new feeder 181-003 to be constructed in 2001.

Feeder 00-182-002 – 4.96

Operating and Maintenance History: This feeder was patrolled in 1999 and 2001; major defects found on patrols were fixed immediately and minor defects were repaired as conditions warranted. A monthly analysis of the Cable Failure Report is performed to determine segments of underground cable that have failed more than 3 times since installed. Work orders are prepared to replace bad cable sections that exceed this criterion. The primary analysis report is periodically reviewed to balance the feeder and correct overloaded protection equipment to improve system reliability. Squirrel guards are installed on distribution transformers where animal contact has occurred. Distribution circuit trimming was completed May 8, 2000. There were 5 feeder outages that contributed to this circuit being classified as a worst circuit. Two outages were related to ice. Additional outages at the substation included 1 unknown, 1 lightning, 1 overhead connector, and 1 emergency repair. Nine other outages at various locations and due to numerous causes occurred on this feeder.

<b>Cause Category</b>	<b># of Outages</b>
Weather Related	8
Overhead Facilities	3
Vehicle	1
Unknown	1
Animal Related	1

Action Planned or Taken to Improve Reliability:

Analysis of the outage history revealed no specific trouble spots requiring attention. Two mid-circuit reclosers are scheduled for installation in June 2001, one west of the substation and one east of the substation. In addition the circuit was re-coordinated and balanced in 2001.

**411.120 (b)(3)(K) Commencing June 10, 2001, tables or graphical representations, covering for the last three years all of the jurisdictional entity's customers and showing, in ascending order, the total number of customers which experienced a set number of interruptions during the year (i.e., the number of customers who experienced zero interruptions, the number of customers who experienced one interruption, etc.).**

This item is not applicable to this annual report.

**411.120 (b)(3)(L) Commencing June 10, 2001, for those customers who experienced interruptions in excess of the service reliability targets, a list of every customer, identified by a unique number assigned by the jurisdictional entity and not the customers name or account number, the number of interruptions and interruption duration experienced in each of the three preceding years, and the number of consecutive years in which the customer has experienced interruptions in excess of the service reliability targets.**

This item is not applicable to this annual report.

**411.120 (b)(3)(M) The name, address and telephone number of a jurisdictional entity representative who can be contacted for additional information regarding the annual report.**

For further information regarding this report, contact:

Gene Lindholm  
System Operations, Analysis and Planning  
Central Illinois Light Company  
300 Liberty Street  
Peoria, Illinois 61602  
Phone: 309-693-4751  
Fax: 309-693-4859  
Email: [glindholm@cilco.com](mailto:glindholm@cilco.com)